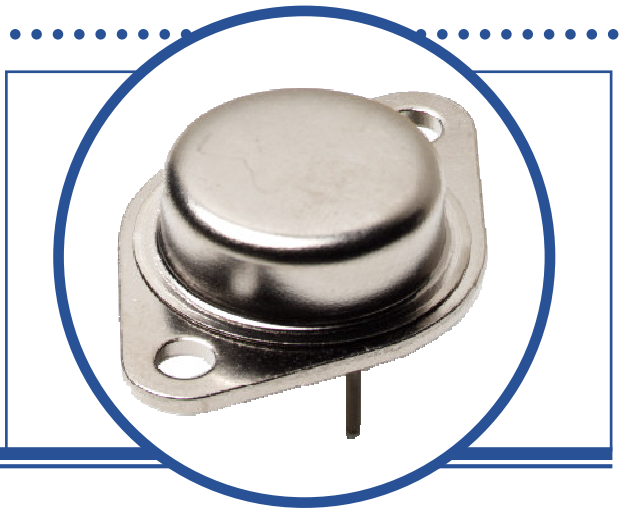
# SILICON EPITAXIAL PNP TRANSISTOR

TT electronics
Semelab Limited

## 2N5883

- High Voltage, Low Saturation Voltages.
- Hermetic TO3 Metal Package.
- Designed For Power Switching and Linear Applications
- Screening Options Available



## ABSOLUTE MAXIMUM RATINGS ($T_C$ = 25°C unless otherwise stated)

| | | | |
|---|---|---|---|
| $V_{CBO}$ | Collector – Base Voltage | | -60V |
| $V_{CEO}$ | Collector – Emitter Voltage | | -60V |
| $V_{EBO}$ | Emitter – Base Voltage | | -5V |
| $I_C$ | Continuous Collector Current | | -25A |
| $I_{CM}$ | Peak Collector Current | | -50A |
| $I_B$ | Base Current | | -7.5A |
| $P_D$ | Total Power Dissipation at | $T_C$ = 25°C | 200W |
| | | Derate Above 25°C | 1.14W/°C |
| $T_J$ | Junction Temperature Range | | -65 to +200°C |
| $T_{stg}$ | Storage Temperature Range | | -65 to +200°C |

### THERMAL PROPERTIES

| Symbols | Parameters | Max. | Units |
|---|---|---|---|
| $R_{\theta JC}$ | Thermal Resistance, Junction To Case | 0.875 | °C/W |



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## ELECTRICAL CHARACTERISTICS ($T_C$ = 25°C unless otherwise stated)

| Symbols | Parameters | Test Conditions | | Min. | Typ | Max. | Units |
|---|---|---|---|---|---|---|---|
| $V_{(BR)CEO}$ [1] | Collector-Emitter Breakdown Voltage | $I_C$ = -50mA | | -60 | | | V |
| $I_{CEV}$ | Collector Cut-Off Current | $V_{CE}$ = -60V | $V_{BE}$ = 1.5V | | | -1.0 | mA |
| | | | $T_C$ = 150°C | | | -10 | |
| $I_{CEO}$ | Collector Cut-Off Current | $V_{CE}$ = -30V | $I_B$ = 0 | | | -2 | |
| $I_{CBO}$ | Collector Cut-Off Current | $V_{CB}$ = -60V | $I_E$ = 0 | | | -1.0 | |
| $I_{EBO}$ | Emitter Cut-Off Current | $V_{EB}$ = -5V | $I_C$ = 0 | | | -1.0 | |
| $h_{FE}$ [1] | Forward-current transfer ratio | $I_C$ = -3A | $V_{CE}$ = -4V | 35 | | | |
| | | $I_C$ = -10A | $V_{CE}$ = -4V | 20 | | 100 | |
| | | $I_C$ = -25A | $V_{CE}$ = -4V | 4 | | | |
| $V_{BE}$ [1] | Base-Emitter Voltage | $I_C$ = -10A | $V_{CE}$ = -4V | | | -1.5 | V |
| $V_{CE(sat)}$ [1] | Collector-Emitter Saturation Voltage | $I_C$ = -15A | $I_B$ = -1.5A | | | -1.0 | |
| | | $I_C$ = -25A | $I_B$ = -6.25A | | | -4 | |
| $V_{BE(sat)}$ [1] | Base-Emitter Saturation Voltage | $I_C$ = -25A | $I_B$ = -6.25A | | | -2.5 | |

## DYNAMIC CHARACTERISTICS

| | | | | | | |
|---|---|---|---|---|---|---|
| $f_T$ | Transition Frequency | $I_C$ = -1.0A<br>f = 1.0MHz | $V_{CE}$ = -10V | 4 | | | MHz |
| $C_{obo}$ | Output Capacitance | $V_{CB}$ = -10V<br>f = 1.0MHz | $I_E$ = 0 | | | 1000 | pF |
| $t_r$ | Rise Time | $V_{CC}$ = -30V<br>$I_{B1}$ = -$I_{B2}$ = -1.0A | $I_C$ = -10A | | | 0.7 | µs |
| $t_s$ | Storage Time | | | | | 1.0 | |
| $t_f$ | Fall Time | | | | | 0.8 | |

**Notes**
(1) Pulse Width ≤ 300us, δ ≤ 2%

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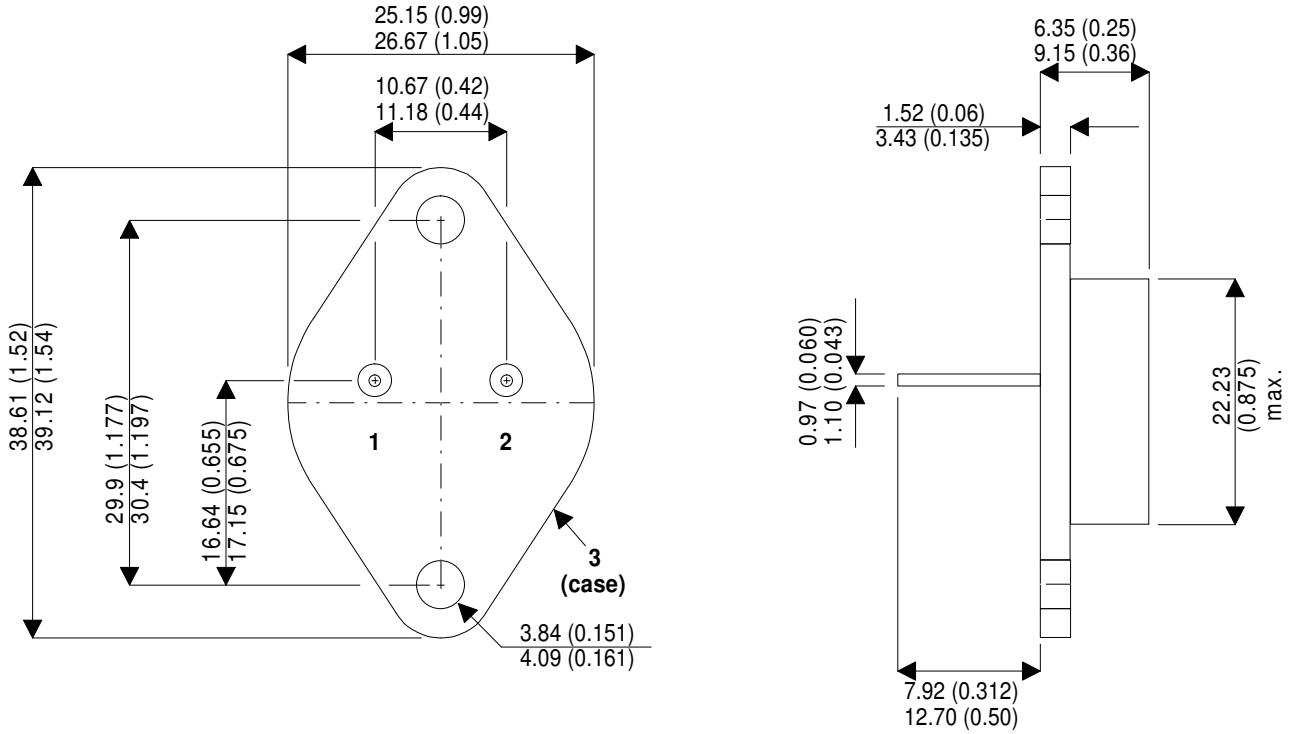
## MECHANICAL DATA

Dimensions in mm (inches)




### TO3 (TO-204AA) METAL PACKAGE

**Underside View**

Pin 1 - Base  Pin 2 - Emitter  Case - Collector